

Common Name: **Dusky Shark**



Photograph by John E. Randall at [www.fishbase.com](http://www.fishbase.com)

Scientific Name: *Carcharhinus obscurus*

Area of Concern: Western Atlantic: Gulf of Mexico and South Atlantic

Year First Listed as a "Species of Concern": 1997

Species Description:

The dusky shark is also known as the bronze whaler or black whaler. It is a large, fairly slender shark with a low interdorsal ridge. The rounded snout is shorter or equal to the width of the mouth. The first dorsal fin originates over or near the free rear tips of the pectoral fins. The color is bronzy gray to blue gray above with white ventrally (Castro 1983; Last and Stevens 1994). This species prefers warm temperate to tropical waters. It occurs from the surf zone to well offshore, and from the surface to depths of 400 m (Compagno 1984). Long migrations associated with temperature change are observed for this species (northward in summer and southward in fall). The dusky shark is not commonly found in estuaries due to its avoidance of low salinity (Compagno 1984; Musick *et al.* 1993). The average length is about 360 cm TL and weight is about 180 kg. Males attain sexual maturity at 279 cm TL (about 19 years); females mature at 284 cm TL (about 21 years). This long lived shark (maximum age is about 40 years) is viviparous with litter sizes ranging from 6 to 14 (85-100cm) and a reproductive period every 3 years either between June/July or December/January. Their diet includes bony fishes, cartilaginous fishes, and squid.

In the western Atlantic, it extends from southern New England to the Caribbean and Gulf of Mexico to southern Brazil. However, its distribution off Central America is poorly known. Its occurrence is uncertain in the eastern North Atlantic, but it has been recorded around oceanic islands off western Africa. These records and others from tropical insular areas may be misidentifications of a sibling species (*C. galapagensis*) (J. Musick, pers. comm.). In the western Indian Ocean, it occurs off South Africa, Mozambique, Madagascar, and possibly in the Red Sea. In the western Pacific it is found in the waters of Japan, China, Vietnam, Australia, and New Caledonia. In the eastern Pacific, the dusky extends from southern California to Gulf of California, Revillagigedo Islands, and possibly Chile (Castro 1983; Compagno 1984).

The dusky shark undertakes long temperature-related migrations. On both coasts of the U.S., dusky sharks migrate northward in summer as the waters warm and retreat southward in fall as water temperatures drop. The dusky shark occurs throughout Australian waters. In western Australia, adolescents and adults move inshore during the summer and fall, with neonates occupying separate inshore areas (Last and Stevens 1994). Seasonal migrations (north in winter and south in summer) also occurs off South Africa (Bass *et al.* 1973). In the Indian Ocean, the young are known to aggregate in dense assemblages when feeding (Compagno 1984).

Last updated 4/13/2004

### Rationale for “Species of Concern” Listing:

#### Demographic and Diversity Concerns:

Declining catch rates for dusky sharks in the western Atlantic are cause for concern. Recent reviews of catch and landings data for the large coastal shark assemblage in the western Atlantic (including dusky and other requiem sharks), found that by 1986 the abundance of many of the large coastal species had probably declined by 50-75% from 1970s levels -- even prior to the expansion of the commercial shark fishery in 1986. Today the dusky shark population in the northwestern Atlantic and Gulf of Mexico is probably at 15-20% of its mid-1970s abundance. Recent demographic analyses of *C. obscurus* in the western Atlantic have generated estimates of the annual rate of population increase of 2.8% (Cortes 1996) and 5.57% (Sminkey 1996). Both of these estimates assume no fishing mortality and a two-year reproductive cycle. Current studies indicate that the reproductive cycle might be three years, not two (Musick 1995; GSAFDF 1996). Given this, and the fact that these sharks are caught as bycatch, population increase rates may be even lower.

#### Factors for Decline:

Currently the principal threat to the dusky shark is from commercial and recreational shark fisheries. Assessment of the fishery using population models is difficult, and a tagging study has been undertaken to determine exploitation rates. Current estimates are that 18-28% of neonates are caught in the first year. Although this is high, assessments indicate that this level of exploitation may be sustainable since only a small number of year classes are targeted. Dusky sharks are taken as bycatch in directed tuna, swordfish, and shark longline fisheries, in tuna and swordfish gill net fisheries. With life history traits such as slow growth and late maturity, the dusky shark is susceptible to overfishing.

Dusky shark, as part of the large coastal shark management unit, was identified as overfished in 1993 when the Shark Fishery Management Plan (FMP) was implemented. This classification was reaffirmed in the latest Report to Congress. The dusky shark has been a prohibited species (meaning that the shark cannot be taken in commercial or recreational fisheries) since 1998. In 2005, a time/area closure will be implemented to protect, in part, juvenile dusky sharks.

#### Status Reviews/Research Completed or Underway:

The IUCN Shark Specialist Group recently evaluated the status of *C. obscurus* using the new listing criteria for the IUCN Red List of Threatened Species. On a global basis, the dusky shark was determined to be "Lower risk, near threatened." However, the U.S. population in the Northwestern Atlantic and Gulf of Mexico was evaluated to be "Vulnerable" based on the decline in abundance indices (IUCN 1996; IUCN/SSG 1996; IUCN 1994).

In 2001, NMFS funded, via its Recover Protected Species funds, a status survey entitled “An analysis of the status and ecology of the dusky shark, *Carcharhinus obscurus*, in the western North Atlantic.” NMFS is evaluating this information and will make a determination on whether the species warrants listing as threatened or endangered under the ESA. NMFS may require more information before it can make this determination.

*For further information on this Species of Concern, or on the Species of Concern Program in general, please contact Ms. Marta Nammack, NMFS, Office of Protected Resources, 1315 East West Highway, Silver Spring, MD 20910, (301)713-1401, Marta.Nammack@noaa.gov ; or Dr. Stephania Bolden, NMFS, Southeast Region, Protected Resources Division, 9721 Executive Center Drive N., St. Petersburg, FL 33702, (727)570-5312, Stephania.Bolden@noaa.gov.*

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